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BIEEE-001

B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)

Term-End Examination

00863

December, 2016

BIEEE-001 : DYNAMIC SYSTEM SIMULATION

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks.*

1. (a) Highlight the importance of 'MATLAB' software for engineering applications. Differentiate between 'Script m-file' and 'Function m-file'. 7

(b) Explain the concept of tool boxes available in 'MATLAB' software and enumerate a few important tool boxes used in SIMULINK. 7

2. (a) How are the 'm-files' created in MATLAB ? Explain with a suitable example. 7

(b) Define various configuration parameters of a SIMULINK model. Also mention the specialities of SIMULINK as a programming tool. 7

3. (a) Discuss the blockset based simulation of a digital control system using first order transfer function model. 7

(b) Explain the procedure to obtain simulation model of a single-phase full-converter using SIMULINK. 7

4. (a) Explain the various steps involved in the simulation of a single-phase inverter with the help of SIMULINK. 7

(b) Explain the procedure used for development of generalized machine models for induction motor using SIMULINK. 7

5. (a) Explain the procedure for the design of a SIMULINK based simulation model for the analysis of a current source inverter driven induction motor. 7

(b) Explain the steps involved in the simulation of an electromechanical system using transfer function model in SIMULINK. 7

6. (a) Explain the steps involved in the simulation of 'MA Process'. 7

(b) Describe the steady-state behaviour of infinite population Markov model. How do you proceed to model it with the help of MATLAB/SIMULINK ? 7

7. (a) Explain the steps involved in the simulation of any digital control system. 7

(b) Write a short note on single server queues with Poisson arrivals. 7